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ABSTRACT

In response to a survey questionnaire, 278 elementary school teachers and secondary school mathematics, science, and social studies teachers in Texas expressed opinions that the teaching of problem solving is important and that it can be taught successfully. While most of the teachers reported that teaching of problem solving was not encouraged in their teacher education program or in their inservice sessions, they rated themselves as good-to-excellent problem solvers. Teachers who teach problem solving in their classrooms tended to be older, with more years of teaching experience, those who belonged to professional associations for their subject areas, those whose teacher training programs encouraged the teaching of problem solving, and those whose inservice sessions encouraged the teaching of problem solving. Despite the existence of positive teacher opinions regarding the importance of teaching problem solving, few were emphasizing it in their classrooms. It is recommended that more focus should be placed on the teaching of problem solving in teacher preparation programs and that teachers should be encouraged to be members of professional subject matter associations. A copy of the survey instrument is appended. (JD)

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A SURVEY OF TEACHERS' OPINIONS AND PRACTICES REGARDING THE TEACHING OF PROBLEM SOLVING SKILLS*

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By

Randell L. Drum, Ed.D.

and

Tim J. Wells, Ed.D.

1981-82

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SP 023 698

A SURVEY OF TEACHERS' OPINIONS AND PRACTICES REGARDING THE TEACHING OF PROBLEM SOLVING SKILLS

By

Randell L. Drum, Ed.D., and Tim J. Wells, Ed.D.

Introduction

It is generally accepted that a major goal of education is to teach problem solving --- a step-by-step approach for encountering real world problems and developing solutions. This has been true throughout the history of modern man with prominent educators encouraging their students to probe, to inquire, to search, and to think. And with the explosion of knowledge that has occurred within the past thirty years, the ability to solve problems has become more and more critical. It is not possible to teach children all the accummulated knowledge they may need, and the answers to the problems of today may not be appropriate for the problems of tomorrow. Children must learn to search for information, to formulate answers, and to create innovative solutions to new problems. They must learn to be problem solvers.

The teaching of problem solving is emphasized in three major areas within the elementary and secondary school programs today --- mathematics, science, and social studies. Writers and researchers within each area have supported problem solving as a major goal of their program and have concluded that it can be taught to students (Samples 1971, Schoenfeld 1982, Schuncke 1980, Suydam 1982). In addition, problem solving skills learned in one curricular area are applicable and are often applied by students to problems in other areas of their lives (Gilbert 1980, Schoenfeld 1982). Therefore, a survey of research indicates that the

teaching of problem solving should begin early and be incorporated throughout the curriculum (Suydam 1982).

There are indications that problem solving is not necessarily being taught by teachers in the elementary and secondary schools. Vye (1981) states, "Teachers frequently emphasize the content to be learned rather than the process of learning; they teach children what to think but don't help them learn how to think." The problem is not one of emphasis but one of oversight. Knowledge of certain content is critical and must be taught. Nickerson (1981) states, "One cannot be expected to solve problems involving chemical analysis if one has no knowledge of chemistry. But knowledge alone is inadequate; students must be taught how to apply problem solving skills to real world situations where content knowledge alone is not sufficient.

To determine whether problem solving skills are indeed being taught in schools and whether teachers' opinions tend to relate to those supported by research and those held by recognized authorities in the fields of mathematics, science, and social studies, the authors conducted a survey of teachers representing the three curricular areas from elementary and secondary schools. Questions on the form surveyed both the teachers' opinions and their practices related to the teaching of problem solving. The appendix includes a copy of the survey instrument.

Method

The survey was restricted to teachers within the state of Texas. School districts were randomly selected from the Texas School Directory-1981-82. Each district was contacted by telephone to secure the names

of teachers at various grade levels and from various subject areas. Six hundred teachers --- 150 elementary, 150 secondary science, 150 secondary mathematics, and 150 secondary social studies --- were mailed questionnaires. Responses were received from 278 (46%) of the teachers contacted.

Findings

The responses to each statement of opinion or practice are reported in Tables 1 - 11 by teacher categories. In general, the following summary statements represent the teachers' responses.

1) The majority of teachers in all categories disagreed with the statement that acquiring general knowledge is more important than learning problem solving skills. This opinion corresponds with statements in the literature supporting problem solving as the ultimate and most important goal of instruction. (See Table 1.)

2) A high percentage of the respondents believe that problem solving skills are applicable to dealing with "everyday" problems. (See Table 2.)

3) A high percentage of the respondents believe that problem solving skills can be taught to students in school. (See Table 3.)

4) A majority of the respondents believe that students are poor problem solvers today. (See Table 4.)

5) A majority of the respondents believe that students are worse problem solvers today than the students of ten years ago were. (See Table 5.)

6) The majority of teachers feel that the implementation of the Texas Assessment of Basic Skills has had no effect on the teaching of problem solving. (See Table 6.)

7) A high percentage of the respondents feel that the teaching of problem solving should be encouraged in teacher training programs in colleges and universities and in school district in-service programs. (See Table 7.)

8) A majority of the respondents report that the teaching of problem solving skills was not encouraged in their college teacher training program. (See Table 8.)

STATEMENT 1. Acquiring general knowledge is more important than learning problem solving skills.

	Elementary Teachers	Math Teachers	Social Studies Teachers	Science Teachers	All Teachers Surveyed
AGREE	13 20.6%	13 19.4%	19 29.7%	16 19.8%	61 22.2%
UNDECIDED	7 11.1%	13 19.4%	12 18.8%	18 22.2%	50 18.2%
DISAGREE	43 68.3%	41 61.2%	33 51.6%	47 58.0%	164 59.6%
TOTAL RESPONDENTS	63	67	64	81	275

Table 1. Responses of teachers to Statement 1 reported by number and by percentage.

STATEMENT 2. Problem solving skills are applicable to dealing with "everyday" problems.

	Elementary Teachers	Math Teachers	Social Studies Teachers	Science Teachers	All Teachers Surveyed
AGREE	59 92.2%	65 95.6%	55 87.3%	79 95.2%	258 92.8%
UNDECIDED	4 6.3%	2 2.9%	4 6.3%	2 2.4%	12 4.3%
DISAGREE	1 1.6%	1 1.5%	4 6.3%	2 2.4%	8 2.9%
TOTAL RESPONDENTS	64	68	63	83	278

Table 2. Responses of teachers to Statement 2 reported by number and by percentage.

STATEMENT 3. Problem solving skills can be taught to students in school.

	Elementary Teachers	Math Teachers	Social Studies Teachers	Science Teachers	All Teachers Surveyed
AGREE	60 93.8%	61 91.0	59 92.2%	80 96.4%	260 93.5%
UNDECIDED	3 4.7%	3 4.5%	2 3.1%	2 2.4%	10 3.6%
DISAGREE	1 1.6%	3 4.5%	3 4.7%	1 1.2%	8 2.9%
TOTAL RESPONDENTS	64	67	64	83	278

Table 3. Responses of teachers to Statement 3 reported by number and by percentage.

STATEMENT 4. Students today are poor problem solvers.

	Elementary Teachers	Math Teachers	Social Studies Teachers	Science Teachers	All Teachers Surveyed
AGREE	42 66.7%	61 91.0%	50 78.1%	70 86.4%	223 81.1%
UNDECIDED	9 14.3%	5 7.5%	9 14.1%	8 9.9%	31 11.3%
DISAGREE	12 19.0%	1 1.5%	5 7.8%	3 3.7%	21 7.6%
TOTAL RESPONDENTS	63	67	64	81	275

Table 4. Responses of teachers to Statement 4 reported by number and by percentage.

STATEMENT 5. Students are ____ better / ____ worse problem solvers today than they were ten years ago.

	Elementary Teachers	Math Teachers	Social Studies Teachers	Science Teachers	All Teachers Surveyed
BETTER	17 29.8%	15 27.8%	8 13.6%	9 12.0%	49 20.0%
WORSE	40 70.2%	39 72.2%	51 86.4%	66 88.0%	196 80.0%
TOTAL RESPONDENTS	57	54	59	75	245

Table 5. Responses of teachers to Statement 5 reported by number and by percentage.

STATEMENT 6. The Texas Assessment of Basic Skills (TABS) has had the following effect on the teaching of problem solving skills.

	Elementary Teachers	Math Teachers	Social Studies Teachers	Science Teachers	All Teachers Surveyed
INCREASED	21 36.2%	14 21.9%	20 33.9%	15 19.7%	70 27.2%
NO EFFECT	34 58.6%	46 71.9%	33 55.9%	56 73.7%	169 65.8%
DECREASED	3 5.2%	4 6.3%	6 10.2%	5 6.6%	18 7.0%
TOTAL RESPONDENTS	58	64	59	76	257

Table 6. Responses of teachers to Statement 6 reported by number and by percentage.

STATEMENT 7. The teaching of problem solving skills should be encouraged in teacher training programs in colleges and universities and in school district in-service programs.

	Elementary Teachers	Math Teachers	Social Studies Teachers	Science Teachers	All Teachers Surveyed
AGREE	59 92.2%	63 92.6%	57 90.5%	79 96.3%	258 93.1%
UNDECIDED	3 4.7%	3 4.4%	0 0.0%	0 0.0%	6 2.2%
DISAGREE	2 3.1%	2 2.9%	6 9.5%	3 3.7%	13 4.7%
TOTAL RESPONDENTS	64	68	63	82	277

Table 7. Responses of teachers to Statement 7 reported by number and by percentage.

STATEMENT 8. The teaching of problem solving skills ____ was ____ was not encouraged in your college teacher training program.

	Elementary Teachers	Math Teachers	Social Studies Teachers	Science Teachers	All Teachers Surveyed
WAS	25 39.7%	17 25.4%	26 41.9%	28 34.6%	96 35.2%
WAS NOT	38 60.3%	50 74.6%	36 58.1%	53 65.4%	177 64.8%
TOTAL RESPONDENTS	63	67	62	81	273

Table 8. Responses of teachers to Statement 8 reported by number and by percentage.

9) A majority of the elementary teachers, secondary mathematics teachers and secondary science teachers report that the teaching of problem solving skills has not been encouraged in in-service programs provided by their school district. Half of the secondary social studies teachers reported that in-service programs have encouraged the teaching of problem solving skills. (See Table 9.)

10) A slight majority of the elementary teachers and secondary mathematics teachers reported that they teach problem solving skills "often to extensively" to their students. Exactly half of the social studies teachers reported the same, as did over two-thirds of the science teachers. (See Table 10.)

11) A large majority of all teachers surveyed rated themselves as good-to-excellent problem solvers. (See Table 11.)

Chi square tests for significant differences were performed to determine whether the variables of sex, subject matter taught, age of teachers, years of teaching experience, membership in professional associations, population of the city in which the school district is located, highest degree held by the teacher, and years elapsed since the teacher last attended college affected the responses to each statement on the opinionnaire. Significant differences occurred in the following instances:

1) Male and female teachers responded differently to the statement that acquiring general knowledge is more important than learning problem solving skills. Females seem to assign more of an emphasis on the teaching of problem solving than do males. (See Table 12.)

2) A significant difference exists among the responses of teachers from different subject areas to the statement regarding whether students are better or worse problem solvers today than were students ten years ago. Although a majority of teachers from each area expressed their belief that students are worse problem solvers today, a significantly higher percentage of social studies and science teachers indicated so. (See Table 13.)

3) On the statement regarding whether the teaching of problem solving has been encouraged in in-service sessions, two significant differences existed:

STATEMEMT 9. The teaching of problem solving skills ____ has been ____ has not been encouraged in in-service programs provided by your school district.

	Elementary Teachers	Math Teachers	Social Studies Teachers	Science Teachers	All Teachers Surveyed
HAS BEEN	24 39.3%	21 30.9%	30 50.0%	26 32.5%	101 37.5%
HAS NOT BEEN	37 60.7%	47 69.1%	30 50.0%	54 67.5%	168 62.5%
TOTAL RESPONDENTS	61	68	60	80	269

Table 9. Responses of teachers to Statement 9 reported by number and by percentage.

STATEMENT 10. Indicate the extent to which you feel you teach problem solving to your students.

	Elementary Teachers	Math Teachers	Social Studies Teachers	Science Teachers	All Teachers Surveyed
OFTEN TO EXTENSIVELY	33 51.6%	40 59.7%	32 50.0%	56 68.3%	161 58.1%
OCCASIONALLY TO SELDOM	31 48.4%	27 40.3%	32 50.0%	26 31.7%	116 41.9%
TOTAL RESPONDENTS	64	67	64	82	277

Table 10. Responses of teachers to Statement 10 reported by number and by percentage.

STATEMENT 11. Rate yourself regarding your own skills as a problem solver.

	Elementary Teachers	Math Teachers	Social Studies Teachers	Science Teachers	All Teachers Surveyed
EXCELLENT TO GOOD	52 81.3%	58 85.3%	49 76.6%	79 88.9%	231 83.4%
FAIR TO POOR	12 18.8%	10 14.7%	15 23.4%	9 11.1%	46 16.6%
TOTAL RESPONDENTS	64	68	64	81	277

Table 11. Responses of teachers to Statement 11 reported by number and by percentage.

	Female Teachers	Male Teachers	Row Total
AGREE	26 16.8%	35 29.4%	61 22.3%
UNDECIDED	26 16.8%	24 20.2%	50 18.2%
DISAGREE	103 66.5%	60 50.4%	163 59.5%
COLUMN TOTAL	155 56.6%	119 43.4%	274 100.0%

CHI SQUARE = 8.16241 with 2 degrees of freedom. Significance = 0.0169

Table 12. Responses of male and female teachers to the statement that acquiring general knowledge is more important than learning problem solving skills.

	Elementary Teachers	Math Teachers	Social Studies Teachers	Science Teachers	Row Total
BETTER	17 29.8%	15 27.8%	8 13.6%	9 12.0%	49 20.0%
WORSE	40 70.2%	39 72.2%	51 86.4%	66 88.0%	196 80.0%
COLUMN TOTAL	57 23.3%	54 22.0%	59 24.1%	75 30.6%	245 100.0%

CHI SQUARE = 10.00992 with 3 degrees of freedom. Significance = 0.0185

Table 13. Responses of teachers from different subject areas to the statement regarding whether students are better or worse problem solvers today than were students ten years ago.

A. Differences existed among age levels of teachers with more of the older teachers indicating that problem solving has been encouraged and a high percentage of the younger teachers indicating that it has not been. (See Table 14.)

B. When analyzed by years of teaching experience, more teachers with fewer years of experience indicate that teaching problem solving has not been encouraged in in-service sessions than those who have more years of teaching experience. (See Table 15.)

4) Significant differences exist when seven variables are analyzed in relation to the extent to which teachers teach problem solving.

A. A significant difference exists among teachers of various age levels. The older the teachers, the more they tend to teach problem solving. (See Table 16.)

B. A significant difference also exists when comparing teachers with various years of teaching experience. The greater the number of years of teaching experience, the more the teacher tends to teach problem solving. (See Table 17.)

C. A further significant difference exists when analyzed according to whether membership is held in a professional association for teachers of mathematics, science, or social studies. Teachers belonging to professional associations tend to teach problem solving more often. (See Table 18.)

D. When compared by the population of the city in which their district exists, a further significant difference exists. Teachers in cities with populations of over 10,000 tend to teach problem solving more than those in smaller cities and communities. (See Table 19.)

E. A further significant difference exists when compared by their self-ratings as problem solvers. Those who considered themselves to be good-to-excellent problem solvers tended to teach problem solving more often. (See Table 20.)

F. The extent to which the teaching of problem solving was encouraged in college teacher training programs was also a significant factor. Teachers attending programs encouraging the teaching of problem solving tend to teach it more often. (See Table 21.)

	AGE OF TEACHERS				ROW TOTAL
	20 - 29	30 - 39	40 - 49	50 - 69	
HAS BEEN	11 19.0%	43 41.3%	23 40.4%	22 45.8%	99 37.1%
HAS NOT BEEN	47 81.0%	61 58.7%	34 59.6%	26 54.2%	168 62.9%
COLUMN TOTAL	58 21.7%	104 39.0%	57 21.3%	48 18.0%	267 100.0%

CHI SQUARE = 10.80661 with 3 degrees of freedom. Significance = 0.0128

Table 14. Responses of teachers by age level to the statement regarding whether the teaching of problem solving has been encouraged in in-service sessions.

	YEARS TEACHING EXPERIENCE				ROW TOTAL
	1 - 3	4 - 9	10 - 19	20 - 42	
HAS BEEN	9 26.5%	16 22.2%	48 44.4%	28 50.9%	101 37.5%
HAS NOT BEEN	25 73.5%	56 77.8%	60 55.6%	27 49.1%	168 62.5%
COLUMN TOTAL	34 12.6%	72 26.8%	180 40.1%	55 20.4%	269 100.0%

CHI SQUARE = 15.36885 with 3 degrees of freedom. Significance = 0.0015

Table 15. Responses of teachers by years of teaching experience to the statement regarding whether the teaching of problem solving has been encouraged in in-service sessions.

	AGE OF TEACHERS				ROW TOTAL
	20 - 29	30 - 39	40 - 49	50 - 69	
OFTEN TO EXTENSIVELY	25 42.4%	55 51.9%	42 68.9%	37 75.5%	159 57.8%
OCCASIONALLY TO SELDOM	34 57.6%	51 48.1%	19 31.1%	12 24.5%	116 42.2%
COLUMN TOTAL	59 21.5%	106 38.5%	61 22.2%	49 17.8%	275 100.0%

CHI SQUARE = 16.63409 with 3 degrees of freedom. Significance = 0.0008

Table 16. Responses of teachers by age to the statement regarding the extent to which they teach problem solving to their students.

	YEARS TEACHING EXPERIENCE				ROW TOTAL
	1 - 3	4 - 9	10 - 19	20 - 42	
OFTEN TO EXTENSIVELY	17 48.6%	33 44.6%	70 61.9%	41 74.5%	161 58.1%
OCCASIONALLY TO SELDOM	18 51.4%	41 55.4%	43 38.1%	14 25.5%	116 41.9%
COLUMN TOTAL	35 12.6%	74 26.7%	113 40.8%	55 19.9%	227 100.0%

CHI SQUARE = 13.64905 with 3 degrees of freedom. Significance = 0.0034

Table 17. Responses of teachers by years of teaching experience to the statement regarding the extent to which they teach problem solving to their students.

	DOESN'T BELONG	BELONGS	ROW TOTAL
OFTEN TO EXTENSIVELY	112 53.8%	48 72.7%	160 58.4%
OCCASIONALLY TO SELDOM	96 46.2%	18 27.3%	114 41.6%
COLUMN TOTAL	208 75.9%	66 24.1%	274 100.0%

CHI SQUARE = 6.59510 with 1 degree of freedom. Significance = 0.0102

Table 18. Responses of teachers by membership in professional associations for the subject areas to the statement regarding the extent to which they teach problem solving to their students.

	POPULATION				
	UNDER 2,000	2,000 - 9,999	10,000 - 99,999	100,000 OR MORE	ROW TOTAL
OFTEN TO EXTENSIVELY	49 50.5%	36 50.0%	48 70.6%	27 71.1%	160 58.2%
OCCASIONALLY TO SELDOM	48 49.5%	36 50.0%	20 29.4%	11 28.9%	115 41.8%
COLUMN TOTAL	97 35.3%	72 26.2%	68 24.7%	38 13.8%	275 100.0%

CHI SQUARE = 11.21318 with 3 degrees of freedom. Significance = 0.0106

Table 19. Responses of teachers by population of the city in which they teach to the statement regarding the extent to which they teach problem solving to their students.

	OFTEN TO EXTENSIVELY	OCCASIONALLY TO SELDOM	ROW TOTAL
EXCELLENT TO GOOD	149	81	230 83.3%
FAIR TO POOR	11	35	46 16.7%
COLUMN TOTAL	160 58.0%	116 42.0%	276 100.0%

CHI SQUARE = 24.62880 with 1 degree of freedom. Significance = 0.0000

Table 20. Responses of teachers comparing their self-rating as problem solvers to the extent to which they teach problem solving to their students.

	OFTEN TO EXTENSIVELY	OCCASIONALLY TO SELDOM	ROW TOTAL
WAS	67	29	96 35.3%
WAS NOT	91	85	176 64.7%
COLUMN TOTAL	158 58.1%	114 41.9%	272 100.0%

CHI SQUARE = 7.62059 with 1 degree of freedom. Significance = 0.0058

Table 21. Responses of teachers comparing the extent to which the teaching of problem solving was encouraged in their college teacher training program to the extent to which they teach problem solving to their students.

G. The extent to which the teaching of problem solving has been encouraged in in-service sessions was also a significant factor. Teachers who have been encouraged in in-service sessions tend to teach problem solving more often to their students. (See Table 22.)

5) One final significant difference when comparing the variables of the teachers' self-ratings as problem solvers and their membership in professional associations. More association members rated themselves higher as problem solvers than did those who were not members. (See Table 23.)

Summary, Conclusions and Recommendations

Summary

Elementary teachers and secondary mathematics, science, and social studies teachers expressed opinions that the teaching of problem solving is important, that it can be taught successfully, that problem solving skills aid in dealing with "everyday" problems, and that students are poor problem solvers and are worse problem solvers than the students of ten years ago. However, most of the teachers reported that the teaching of problem solving was not encouraged in their teacher education program or in their school district in-service sessions. And the only category in which a large majority of teachers reported that they teach problem solving was secondary science teachers; only half to slightly more than half of the teachers in the other categories teach problem solving. Most of the teachers rated themselves as being good-to-excellent problem solvers.

Analyses of the data indicate several significant results. Female teachers seem to assign more of an emphasis on teaching problem solving than do males. Social studies and science teachers, in particular, think students are worse problem solvers today than were students ten years ago. Older teachers and teachers with more years of teaching experience tended to report more often that in-service sessions had

	OFTEN TO EXTENSIVELY	OCCASIONALLY TO SELDOM	ROW TOTAL
HAS BEEN	67	34	101 37.7%
HAS NOT BEEN	90	77	167 62.3%
COLUMN TOTAL	157 58.6%	111 41.4%	268 100.0%

CHI SQUARE = 3.52046 with 1 degree of freedom. Significance = 0.0606

Table 22. Responses of teachers comparing the extent to which the teaching of problem solving has been encouraged in in-service sessions to the extent to which they teach problem solving to their students.

	DOESN'T BELONG	BELONGS	ROW TOTAL
EXCELLENT TO GOOD	165 79.3%	63 95.5%	228 83.2%
FAIR TO POOR	43 20.7%	3 4.5%	46 16.8%
COLUMN TOTAL	208 75.9%	66 24.1%	274 100.0%

CHI SQUARE = 8.20962 with 1 degree of freedom. Significance = 0.0042

Table 23. Responses of teachers by membership in professional associations for the subject areas compared to their self-ratings as problem solvers.

encouraged the teaching of problem solving. Teachers who teach problem solving in their classrooms tend to be the older teachers, those with more years of teaching experience, those who belong to professional associations for the subject areas, those teaching in cities of over 10,000 population, those who rated themselves as good-to-excellent problem solvers, those whose teacher training programs encouraged the teaching of problem solving, and those whose in-service sessions had encouraged the teaching of problem solving. Finally, teachers who belong to professional associations for the subject areas tend to rate themselves more highly as problem solvers.

Conclusions

As a result of this study, the writers have formed the following conclusions:

1) Despite the existence of positive teacher opinions regarding the importance of and the teaching of problem solving too few teachers are emphasizing it in their classrooms.

2) Lack of emphasis on the teaching of problem solving in teacher training institutions and in school district in-service sessions is contributing to the fact that large numbers of teachers are not teaching problem solving.

3) Membership in professional subject matter associations is a determining factor in identifying teachers who are made likely to teach problem solving.

Recommendations

1) Since the ability to solve problems is considered to be of importance, greater emphasis needs to be placed on the teaching of problem solving.

2) Teacher training institutions need to place greater emphasis on the teaching of problem solving.

3) In general, school districts should place greater emphasis on the teaching of problem solving in in-service training programs.

4) School districts should consider membership in professional subject matter associations as a part of their screening process for hiring new teachers.

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APPENDIX

Letter to Participants

Survey Instrument

CCSU

May 7, 1982

Dear Colleague:

There are many in our profession who believe that the major aim of our schools today should be to teach problem solving--a step-by-step process for handling any situation in life which might be encountered. Proponents argue that it is impossible to teach all concepts and processes which may be needed in life and that the problem solving approach is the solution to the situation.

You have been selected as one of only 150 secondary teachers from throughout Texas to be surveyed to determine your beliefs regarding problem solving and to determine the extent to which you are teaching it in your classroom.

We hope you will take a few moments to complete the enclosed questionnaire and return it to us in the envelope we have provided. All completed questionnaires will be anonymous and individual data will be kept confidential.

Yours truly,

Randell L. Drum, Ed.D.

Enclosure

RLD/lt

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A campus of the University System of South Texas
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A STUDY RELATED TO PROBLEM SOLVING

The following are statements about some educators' opinions regarding problem solving. Please indicate how much you agree or disagree with each statement.

1. Acquiring general knowledge is more important than learning problem solving skills.

_____ Strongly Agree

_____ Agree

_____ Undecided

_____ Disagree

_____ Strongly Disagree

2. Problem solving skills are applicable to dealing with "everyday" problems.

_____ Strongly Agree

_____ Agree

_____ Undecided

_____ Disagree

_____ Strongly Disagree

3. Problem solving skills can be taught to students in school.

_____ Strongly Agree

_____ Agree

_____ Undecided

_____ Disagree

_____ Strongly Disagree

4. Students today are poor problem solvers.

_____ Strongly Agree

_____ Agree

_____ Undecided

_____ Disagree

_____ Strongly Disagree

5. Students are _____ better / _____ worse problem solvers today than they were ten years ago.

6. The Texas Assessment of Basic Skills (TABS) has had the following effect on the teaching of problem solving skills.

_____ Increased

_____ No effect

_____ Decreased

7. The teaching of problem solving skills should be encouraged in teacher training programs in colleges and universities and in school district in-service programs.

_____ Strongly Agree

_____ Agree

_____ Undecided

_____ Disagree

_____ Strongly Disagree

8. The teaching of problem solving skills _____ was / _____ was not encouraged in your college teacher training program.

9. The teaching of problem solving skills _____ has been / _____ has not been encouraged in in-service programs provided by your school district.

10. Indicate the extent to which you feel you teach problem solving to your students.

_____ Extensively

_____ Often

_____ Occasionally

_____ Seldom

_____ Never

11. Rate yourself regarding your own skills as a problem solver.

_____ Excellent

_____ Good

_____ Fair

_____ Poor

_____ Terrible

Personal and School Information:

Sex: _____ Female

_____ Male

Age _____

Years of Teaching Experience: _____

Highest Degree Held: _____Bachelor's,_____Master's,_____Doctorate.

Present Teaching Assignment: Grade Level_____

Subject _____

Years Elapsed Since Last Attending College: _____

Memberships in Professional Associations for Specific Subject Areas (Please specify):

_____

_____

Approximate Population of City Where You Teach._____